

Abstract of the Disclosure

Devices and methods for removing core material contained in plaque deposits inside a blood vessel are disclosed. A device in accordance with one embodiment of the present invention includes a catheter consisting of an elongate shaft, a balloon disposed
5 about a portion of the elongate shaft for urging the core material from the plaque deposits, and a plurality of collection lumens with distal ends disposed proximally and/or distally of the balloon for extracting the urged core material. A method in accordance with one embodiment includes the steps of inserting a distal portion of the catheter into a lumen of the blood vessel, positioning the balloon proximate a plaque deposit, inflating
10 the balloon to rupture the plaque and urge the core material therefrom, and extracting the urged core material by suction means at the proximal ends of the collection lumens.